

Abstract

A melt-infiltrated, fibre-reinforced composite ceramic containing high-temperature-resistant fibres, in particular fibres based on Si/C/B/N, which are reaction-bonded to a matrix based on Si and also a process for producing such a composite ceramic are described. The silicon melt which is used for the melt infiltration contains additions of iron, chromium, titanium, molybdenum, nickel or aluminium, with particular preference being given to a silicon melt containing from about 5 to 50% by weight of iron and from about 1 to 10% by weight of chromium. This gives a simplified production process compared with conventional silicon melt infiltration and improved properties of the composite ceramic (Fig. 1).

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